

Contributions to the knowledge of the Ovulidae. XIV. A new species in the genus *Prosimnia* Schilder, 1925

(Mollusca: Gastropoda)

Dirk Fehse

Fehse, D. (2005): Contributions to the knowledge of the Ovulidae. XIV. A new species in the genus *Prosimnia* Schilder, 1925. – Spixiana 28/1: 13-16

A new species of the gastropod family Ovulidae Fleming, 1828 is described as endemic in northern Red Sea. The new species belongs to the genus *Prosimnia* Schilder, 1925 and in the subfamily Simniinae Schilder, 1925. Type species of the genus is *Ovula semperi* Weinkauff, 1881. The new species *Prosimnia korkosi*, spec. nov. is compared with the following similar species of the genus from the Indopacific area: *Prosimnia semperi*, *Prosimnia boshuensis* Cate, 1973, *Prosimnia draconis* Cate, 1973, and *Prosimnia pierei* (Petuch, 1973). The status of *P. draconis* and *P. boshuensis* as valid species different from *P. semperi* is demonstrated.

Dirk Fehse, Nippeser Str. 3, D-12524 Berlin, Germany;
e-mail: dirk.fehse@ftk.rohde-schwarz.com

Introduction

Only very few species among the Ovulidae Fleming, 1828 are sculptured. These species belong to the genera *Rotaovula* Cate & Azuma in Cate, 1973 and *Prosimnia* Schilder, 1925. Normally the shells within Ovulidae are dorsally smooth or at best transversely striated but the shells of the two mentioned genera are costulated and the surface of the shells in the genus *Prosimnia* are furthermore very rough or crenulated. *Prosimnia semperi* was described in 1881 by Weinkauff from Borneo. In 1973, Cate introduced provisionally two subspecies to *P. semperi* – *P. s. boshuensis* and *P. s. draconis* – and explained, “[*P. semperi*] ... is apparently an extremely variable species in shell morphology, seeming to vary from one population to another frequently even within the same locality ... The shape of the shell, its color, size and degree of sculpture will often vary strikingly though I am provisionally suggesting two new subspecies ... until further study of their animal parts can better clarify the differences, if any, in the species.” (1973: 74). Catalogues published by the internet attach Cate’s subspecies as synonyms to *P. semperi* because the shell differences seemed to be very minor and intraspecific to their authors. How-

ever, again differences in the soft parts especially of the mantle lobes distinguish *P. draconis* from *P. semperi* although the shell morphology is very similar (Debelius 1996: 53, compare Fehse 2003).

Recently, two specimens recently sampled in the Red Sea were offered by a Brazilian shell dealer. It seemed that these specimens were slightly subadult because the transverse dorsal keel was not developed. However, the author was assured of an additional new species in *Prosimnia* but there were not enough specimens at hand for a description. By chance the author came in contact to Daniel Korkos from Israel who had three further self-collected specimens. All available shells improve the constancy in the distinguishing features. Therefore, this species is described as new.

Unfortunately, there are no soft parts available from the rare and endemic new species. Hopefully, further samples will confirm the striking differences of the shell by the soft part and radulae.

Abbreviations

DFB collection Dirk Fehse, Berlin, Germany.
DKI collection Daniel Korkos, Tel Mond, Israel.
ZSM Zoological State Collection Munich, Germany.

Prosimnia korkosi, spec. nov.

Figs 1-3



Fig. 1. *Prosimnia korkosi*, spec. nov., Holotype, ZSM, coll.



Fig. 2. *Prosimnia korkosi*, spec. nov., Paratype 1, DFB, coll. No. 7690.



Fig. 3. *Prosimnia korkosi*, spec. nov., Paratype 2, coll. DKI.

Types. Holotype: Off Coral Beach, Eilat, Israel, Gulf of Aqaba, Northern Red Sea, found alive on small sea fan during night dive at 35-40 meters depth; length: 12.1 mm; width: 3.7 mm; height: 3.2 mm; adult (ZSM coll.). – Paratypes: Nr. 1: same locality as holotype; length: 11.9 mm; width: 3.7 mm; height: 3.0 mm; adult (DFB coll. No. 7690); Nr. 2: same locality as holotype; length: 11.4 mm; width: 3.5 mm; height: 2.9 mm; adult (coll. DKI); Nr. 3: recent; off Eilat, Gulf of Aqaba, Red Sea; taken in gorgonians at 20-30 m, by dive; length: 12.7 mm; width: 3.9 mm; height: 3.4 mm; adult (DFB coll. No. 7421).

Description of holotype

Shell small and spindle shaped without a transverse keel at the rear dorsal shoulder. Terminals rather pointed but less so anteriorly. Dorsum covered by transverse, weakly incised striae overall with fine intersecting longitudinal growth lines that create a subglossy and a slightly rough appearance. Ventrum long, narrow and pointed elliptical and covered by thin callous that lessen the shell sculpture. Ventrum tapers evenly towards both pointed ends with a longitudinal, nearly obscured and crenulated funiculum abapically. Aperture long and narrow but widens towards the fossula section. Labral lip flattened ventrally. Outer labral margin roundly shouldered whereas its inner margin is roundly keeled with blunt, very numerous and fine denticles that cross as weak ridges the breadth of the labrum. Columellar rounded without any specific character. A longitudinal carinal ridge is very obscured. Fossula short, very shallow and narrow, and bordered internally by a rounded carinal ridge.

Shell translucent yellowish white in colour. The internal siphonal and anal canal light pinkish.

Variation. Shell morphology is extensively constant although the shell surface varies from almost smooth to slightly and finely crenulated.

Etymology. The new species is named in honour to Daniel Korkos, Israel, who supplied three type specimens that confirmed the distinguishing features.

Discussion

At first glance the new species is somewhat similar to *P. semperi*, *P. boshuensis* and *P. draconis* – the *P. semperi* species complex – by the general shell outline, but it differs in detail essentially by the lack off any transverse dorsal keel. The shells of the *P. semperi* species complex have a sub-rhomboid appearance, whereas the shell of *P. korkosi* is spindle-

shaped. The transverse striae and the growth lines are very fine and only shallowly incised in the new species. Therefore, the shell of *P. korkosi* has a somewhat subadult appearance with its smoother, more glossy surface. Furthermore, the funiculus is more internally located and almost obscured and is only visible due to the presence of few denticles on the left wall of the anal canal. The denticles on the inner edge and outer margin of the labral lip are also more numerous, finer and not very prominent in contrast to the *P. semperi* species complex. Therefore, the new species is clearly distinguishable from the latter species complex.

There is no real similarity between the new species and *Prosimnia piriei*. *Prosimnia korkosi* is easily distinguishable from the latter by the general shell morphology. The shell periphery of *P. piriei* is surrounded by a thick and crenulated or striated callosity. The shell is of *P. piriei* is also mostly larger and the aperture is very different with the crenulated and striated ventrum and the fully developed funiculus. Also the colour pattern of *P. piriei* with its numerous transverse and regularly interrupted lines of brown colour distinguish it from *P. korkosi*.

Differential diagnosis

The differences in the soft parts of *Prosimnia semperi*, *P. boshuensis*, *P. draconis*, and *P. piriei* appear as follows:

Prosimnia semperi: The mantle lobes are translucent with numerous white, bi-pinnate papillae that imitate the polyps of the hosts whereas the shell is similarly coloured as the steam of the coral (Debelius 1996: 53 [*Prosimnia boshuensis*"], Okutani 2000: pl. 110, Coleman 2003: 93).

Prosimnia boshuensis: The mantle lobes are bright red with numerous little dots of even more intensive colour and bright yellow, amorphous papillae of truncated cone-like shape. The reddish shell in combination with the red mantle lobes is identical with the steam of the host coral and the yellow papillae imitate perfectly the coral polyps (Debelius 1996: 42 [*Crenavolva striatula*]).

Prosimnia draconis: The mantle lobes are translucent with numerous bright red and blunt papillae with numerous white tentacles. The yellow shell imitates the yellow steam of the sea fan whereas the papillae are nearly identical in colour and sculpture with the host polyps (Coleman 2003: 93 – last row left picture with yellow shell from Dampier, WA, called here "*Prosimnia semperi*").



Fig. 4. *Prosimnia boshuensis* Cate, 1973, DFB, coll. No. 4751. Nada, Wakayama Pref., Japan; dived in 10-30 fathoms.



Fig. 5. *Prosimnia draconis* Cate, 1973, DFB, coll. No. 4536. Bohol Isl., Philippines; by tangle-nets in 100-150 m.



Fig. 6. *Prosimnia piriei* (Petuch, 1973), DFB, coll. No. 7347. New Hanover Islands, Indonesia; on red gorgonia in strong current at 35-45 m.



No. 3272. Kudahiti Atoll, Maldives; by dive in March 1983.

Prosimnia piri: The mantle lobes are translucent with numerous crimson red appearing papillae. The papillae have a short and thin steam and a big, amorphous, rounded crown. The papillae reminds a stink-horn. The colour of the crown is like the mantle lobes but they are drawn with very fine and numerous red trickles that remind blood vessels. Again the shell colour is similar to the steam of the host coral whereas the papillae imitate retracted polyps of the host (Debelius 1996: 49, text fig. 9, 10, Coleman 2003: 93).

The yellow shell of *P. draconis* is not the result of an alimentary homochromy as large series of specimens confirm. The colour is always present in different shades. Sometimes a reddish colour is superimposed in any part of the shell and, therefore, only the reddish colour is originated from host pigments.

Again Cate's sensitivity in detecting species within the Ovulidae by the shell morphology alone is confirmed by the soft parts. His feeling for the distinguishing features is astonishing because there are only few characters available that can be used to differentiate seemingly related forms in the Ovulidae, and often he had only few or one specimens at hand for examination.

The occurrence of Ovulidae in the Red Sea province is still fragmentary but the almost isolated geographic position of the Red Sea opens the possibility for an unique and endemic marine fauna. Already the triviid *Austrotrivia rubramaculosa* Fehse & Grego, 2002 had been detected to be endemic to the northern part of the Red Sea. In the same area the new ovulid species was discovered. Until now the following species are known to occur in the Red Sea:

Ovulidae:

- Prionovolva pulchella* (H. Adams, 1873)
- Habuprionovolva* cf. *aenigma* (Azuma & Cate, 1971)
- Dentiovula dorsuosa* (Hinds, 1844)
- Pseudosimnia wieseorum* Lorenz, 1981
- Diminivola aurantiomacula* Cate & Azuma in Cate, 1973

- Calpurnius verrucosus* (Linnaeus, 1758)
- Procalpurnus lacteus* (Lamarck, 1810)
- Prosimnia semperi* (Weinkauff, 1881) from Pleistocene
- Prosimnia korkosi* spec. nov.
- Hiatovolva brunneiterma* (Cate, 1969)

Pediculariidae:

- Pseudocypraea adamsonii* (Sowerby, 1832)
- Pedicularia granulata* Neubert, 1998

References

- Cate, C. N. 1973. A Systematic Revision of the Recent Cypraeid Family Ovulidae (Mollusca: Gastropoda). – *Veliger* 15 Suppl.: I-IV + 1-116, text figs. 1-251
- Coleman, N. 2003. Sea Shells. Catalogue of Indo-Pacific Mollusca. – Neville Coleman's Underwater Geographic Pty. Ltd., Springwood: 144 pp., num. unnumb. text figs. (2002)
- Debelius, H. 1996. Nudibranchs and Sea Snails. Indo-Pacific Field Guide. – IKAN-Unterwasserarchiv, Frankfurt: 323 pp., num. text figs.
- Fehse, D. 2003. Beiträge zur Kenntnis der Ovulidae. XIII. *Pseudosimnia flava*, spec. nov. und *Aperiovula juanjosephii* Perez & Gomez, 1987 aus dem Bathyal des Zentralatlantiks. – *Spixiana* 26(3): 269-275, text figs 1-9
- & J. Grego 2002. Contributions to the knowledge of the Triviidae (Mollusca: Gastropoda). IV. New species in the genus *Trivirostra* Jousseume, 1884 and *Dolichupis* Iredale, 1930. – *La Conchiglia* 34(302): 43-56, pls. 1-7, text figs. 1-2, 1 unnumb. tab.
- Liltved, W. R. 2000. Cowries and their relatives of Southern Africa. A study of the southern African Cypraeacean and Velutinacean gastropod fauna. – Gordon Verhoef, Seacomber Publ., 2nd enlarged edition: 224 pp., 298 + numerous unnumbered text figs.
- Neubert, E. 1998. Six new species of marine gastropods from the Red Sea and the Gulf of Aden. – *Fauna of Arabia* 17: 463-472, 25 text figs.
- Okutani, T. 2000. Marine Mollusks in Japan. – Tokai University Press, Tokyo: XLVII + 1173 pp., 542 pls., 27 unnumb. figs.
- Oliverio, M., R. Chemello & M. Taviani 1995. Host association and external morphology of *Dentiovula dorsuosa* from the Red Sea (Prosobranchia, Caenogastropoda, Ovulidae). – *Argonauta* 9(1-6): 23-30
- Petuch, E. J. 1973. A New Species of *Primovula* from the Western Solomon Sea. – *Veliger* 16(1): 103-104, 2 figs.
- Veldsman, V. 1998. Interessante fonds van suid Natal. – *Strandloper* 254: 10+12, 6 unnumb. text figs.